RS-8110-1

Groundwater Monitoring

Well Maintenance and Redevelopment

US EPA RECORDS CENTER REGION 5

414116

At the time of purging and sample collection, observations are recorded in the engineering field books. Field measurements include casing height (stick-up), depth to water (before and after purging), depth to water following recharge, and total well depth. Field personnel also make notes of the general condition and functionality of each monitoring point. From the field measurements and routine inspections, a determination is made of any corrective actions which may be required. Minor repairs are made at the time of inspection.

As a part of the normal well assessment program, the ability of each monitoring point to produce an adequate quantity of representative groundwater is noted. Redevelopment may be prescribed for those wells which produce turbid samples, exhibit reduced inflow following purging, show a pronounced reduction in total depth, or have been inactive for some period of time.

There are three methods commonly employed for monitoring well redevelopment: compressed air, water jetting and pumping. Compressed air redevelopment, or "air jetting" uses high pressure air to blow accumulated sediments out of the well casing. A rigid pipe connected to a high capacity air compressor is lowered to the bottom of the well. Sediments are forced up and out of the well casing by the air velocity. A particular advantage of air jetting may be that no fluid or other foreign matter is introduced into the water-bearing stratum.

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Water jetting employs the same principle as air jetting, except that water under pressure is substituted for compressed air. Clean water is pumped into the well point, where it mixes with and loosens accumulated sediments. The dislodged sediments are then forced up and out of the well casing in slurry form. With this method, non-native waters may be pumped into subsurface strata. Extensive purging of the well following water jetting may be required to assure the absence of non-native waters.

Pumping of fluids from the well screen may also be effective in removing sediments under certain conditions. The pump used must be capable of passing the resultant slurry of groundwater and sediment. Generally a high capacity submersible pump is selected for this purpose, sediments with a small maximum grain size are more easily removed.

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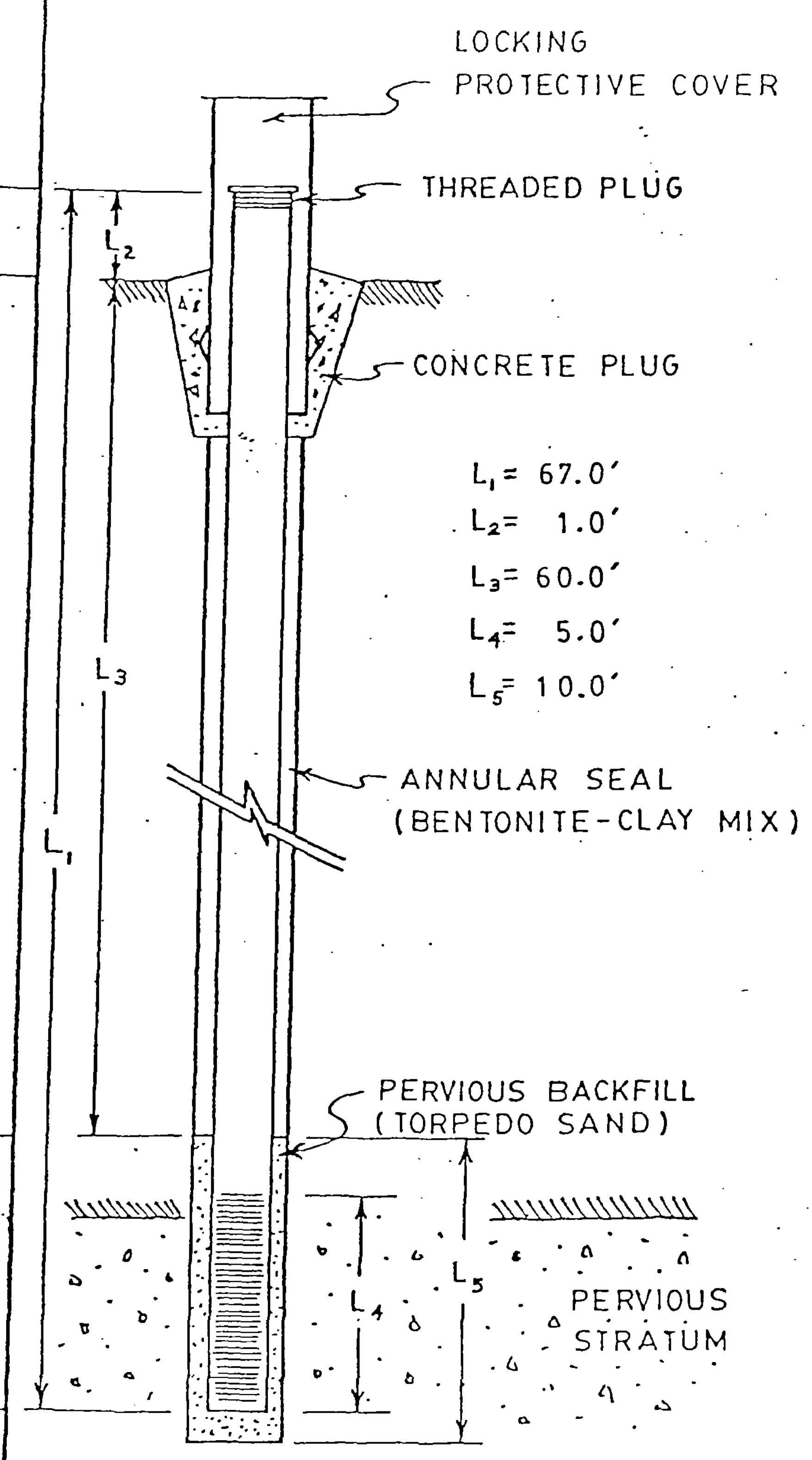
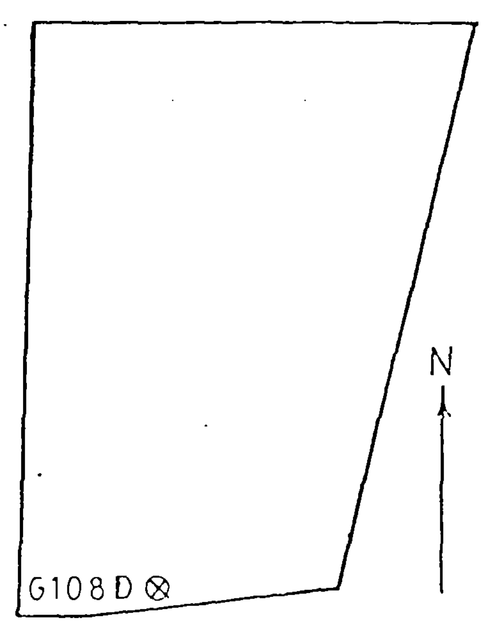
MONITORING WELL DETAIL

SITE: RICHTON PARK LANDFILL

WELL IDENTIFICATION: G108D

ELEV. US DATUM	WELL DETAIL	REMARKS
		DATE OF DRILLING: 10-13-77 DRILLER: W.H. FLOOD & CO. WELL CASING: SCH. 40 PVC WELL DIAMETER: 4" SCREEN SLOT: 0.02"

LOCATION MAP



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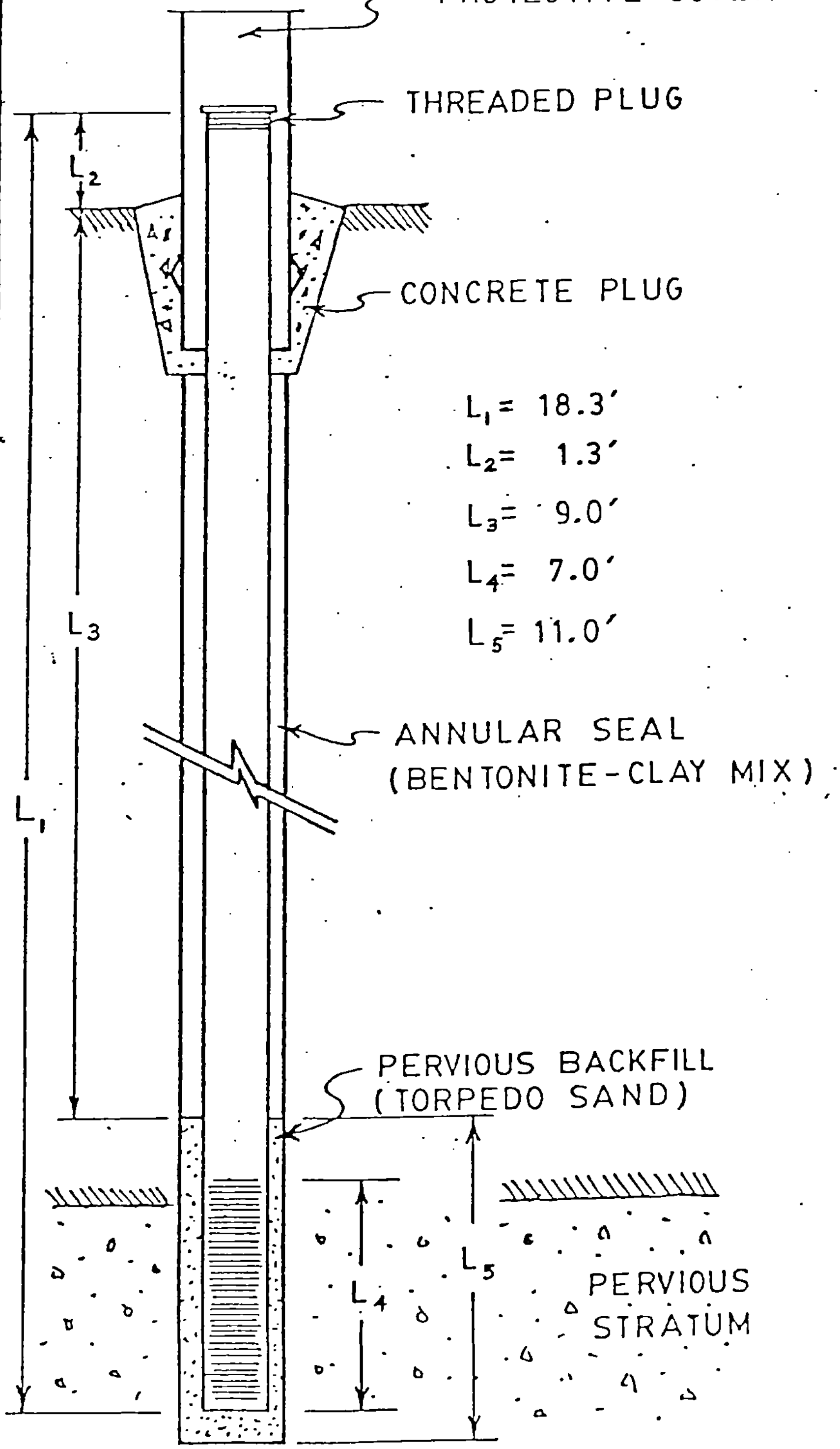
MONITORING WELL DETAIL

SITE: RICHTON PARK LANDFILL

WELL IDENTIFICATION: G108

ELEV. DATUM	WELL DETAIL	REMARKS



DATE OF DRILLING: 10-13-77

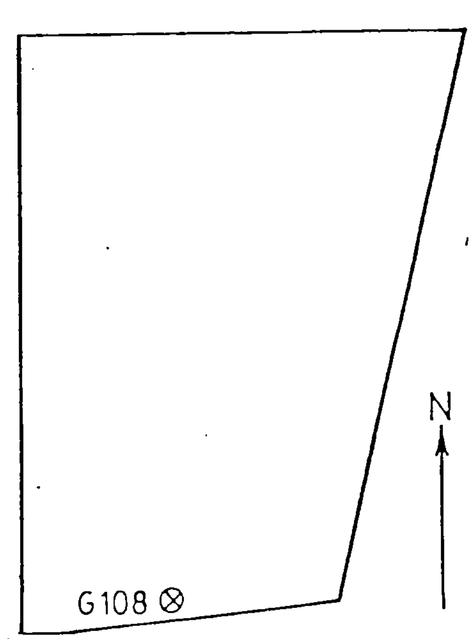
DRILLER: W.H. FLOOD & CO.

WELL CASING: SCH. 40 PVC

WELL DIAMETER: 4"

SCREEN SLOT: 0.02"

LOCATION MAP



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STATE OF ILLINOIS

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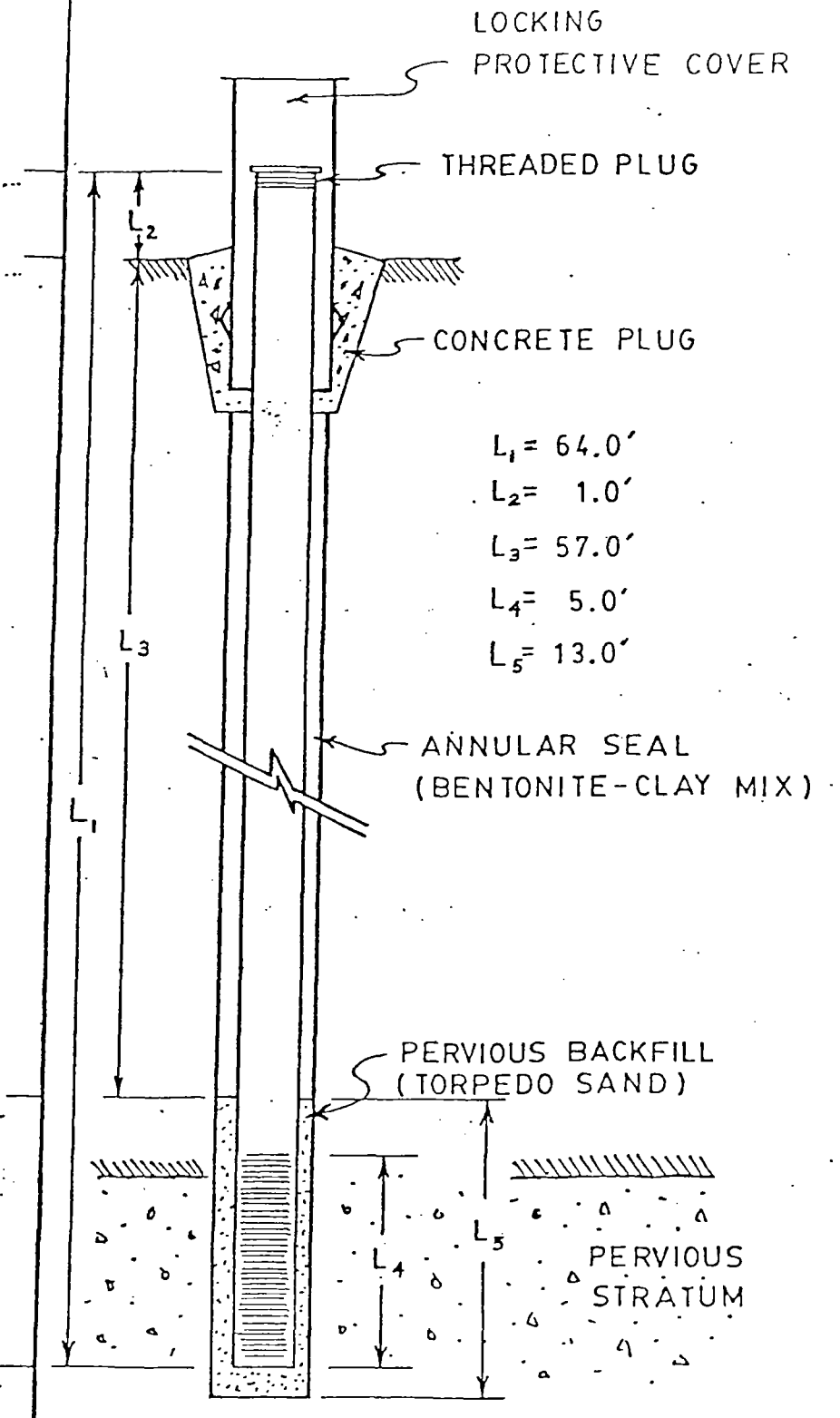
MONITORING WELL DETAIL

SITE: RICHTON PARK LANDFILL

WELL IDENTIFICATION: G103D

ELEV. U.S. DATUM

WELL DETAIL



L_1 = 64.0'
L_2 = 1.0'
L_3 = 57.0'
L_4 = 5.0'
L_5 = 13.0'

REMARKS

DATE OF DRILLING: 10-13-77

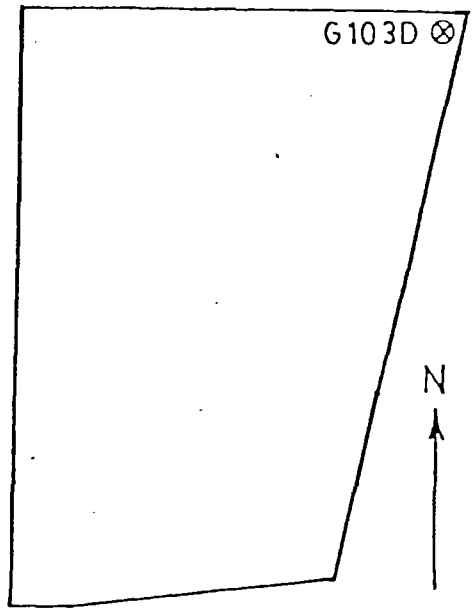
DRILLER: W.H. FLOOD & CO.

WELL CASING: SCH. 40 PVC

WELL DIAMETER: 4"

SCREEN SLOT: 0.02"

LOCATION MAP



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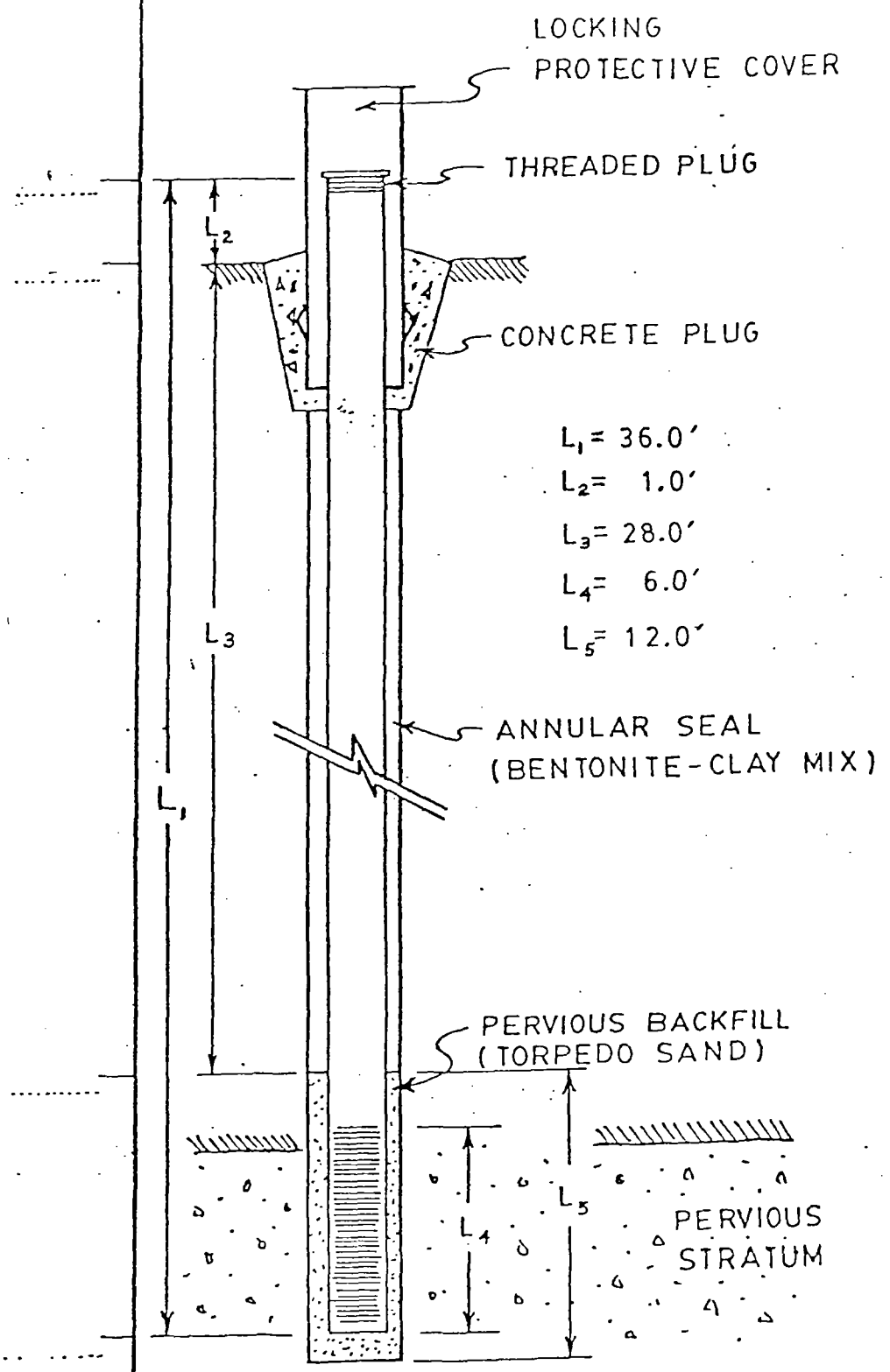
MONITORING WELL DETAIL

SITE: RICHTON PARK LANDFILL

WELL IDENTIFICATION: G103

ELEV. U.S.G.S. DATUM

WELL DETAIL



REMARKS

DATE OF DRILLING: 10-13-77

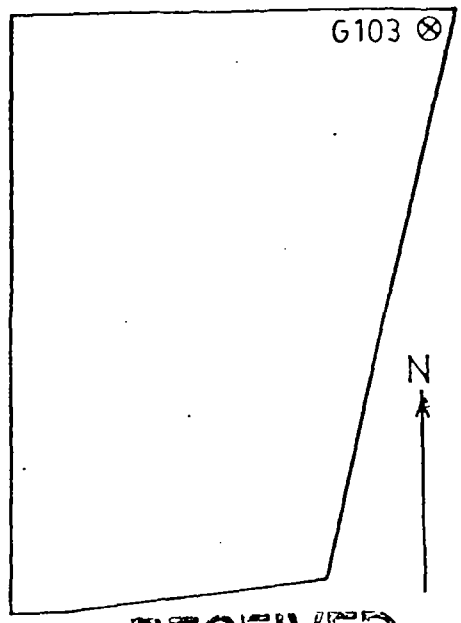
DRILLER: W.H. FLOOD & CO.

WELL CASING: SCH. 40 PVC

WELL DIAMETER: 4"

SCREEN SLOT: 0.02"

LOCATION MAP



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Subsurface Engineering Associates

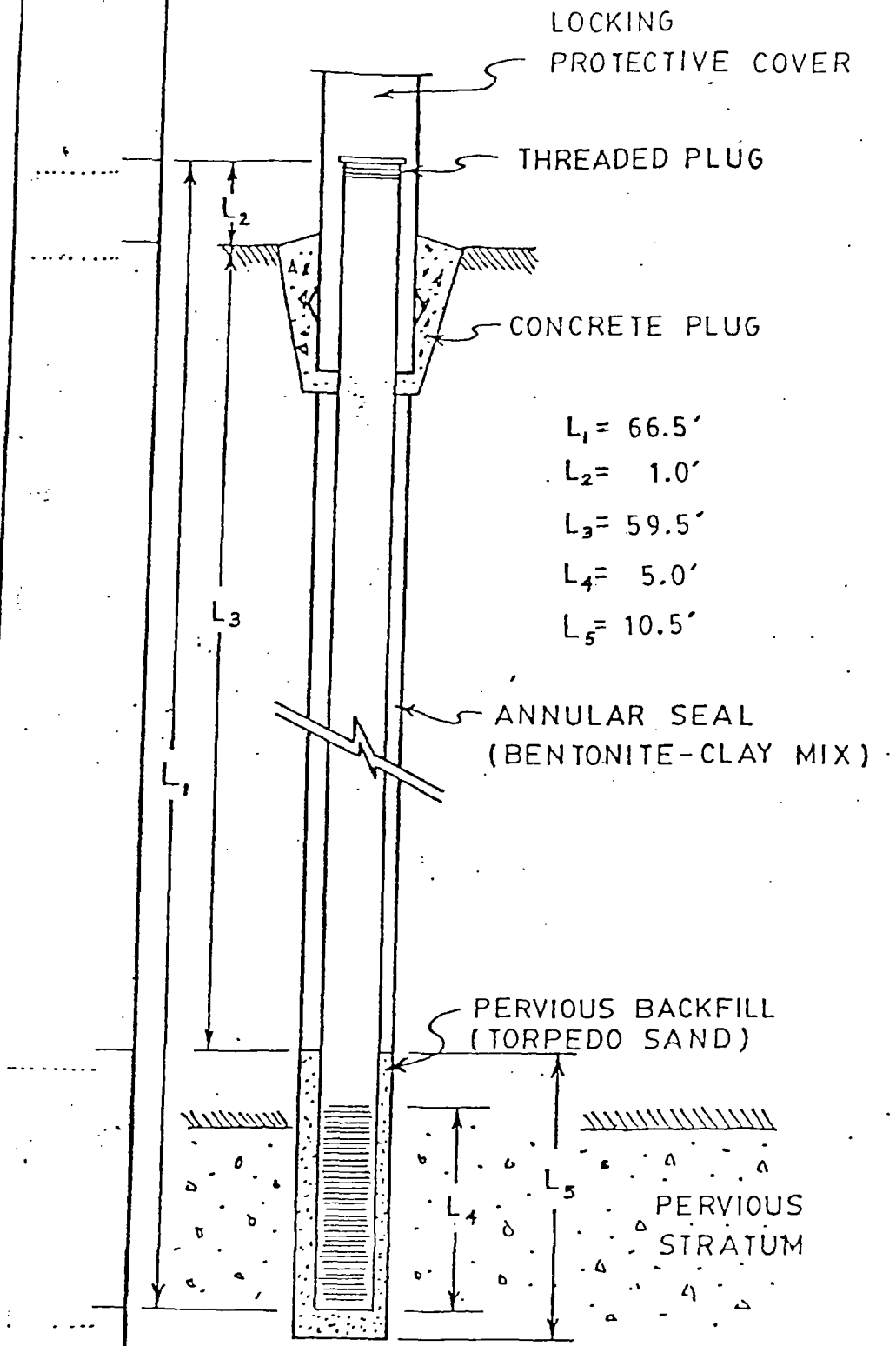
MONITORING WELL DETAIL

SITE: RICHTON PARK LANDFILL

WELL IDENTIFICATION: G102D

ELEV. U.S.S DATUM

WELL DETAIL



REMARKS

DATE OF DRILLING: 10-13-77

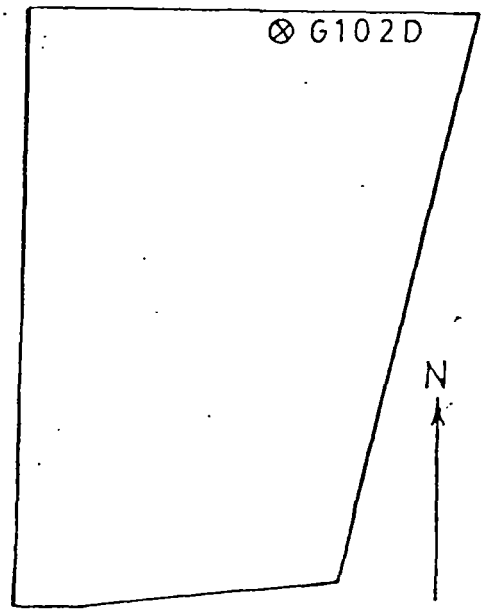
DRILLER: W.H. FLOOD & CO.

WELL CASING: SCH. 40 PV

WELL DIAMETER: 4"

SCREEN SLOT: 0.02"

LOCATION MAP



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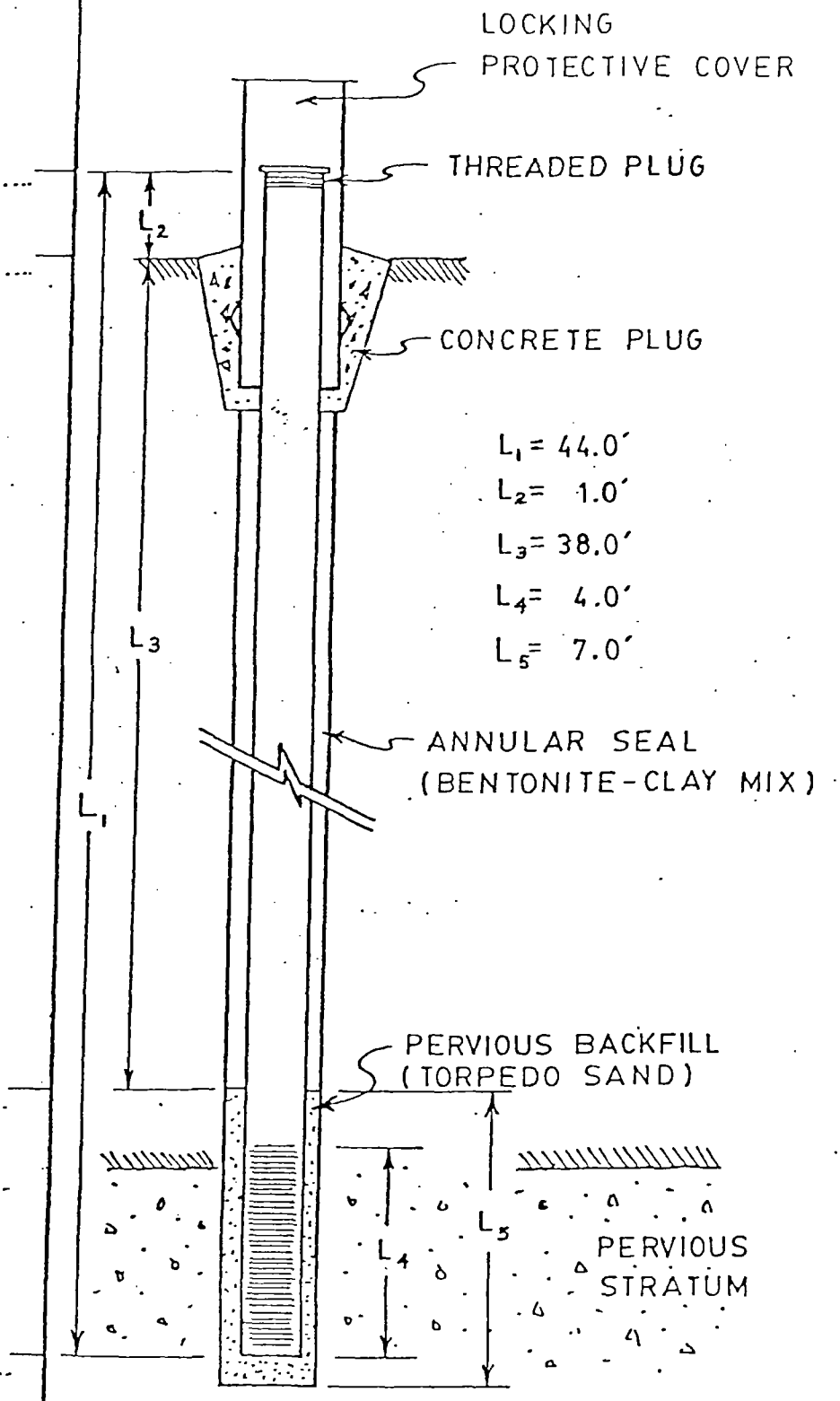
MONITORING WELL DETAIL

SITE: RICHTON PARK LANDFILL

WELL IDENTIFICATION: G102

ELEV. U.. DATUM

WELL DETAIL



REMARKS

DATE OF DRILLING: 10-13-77

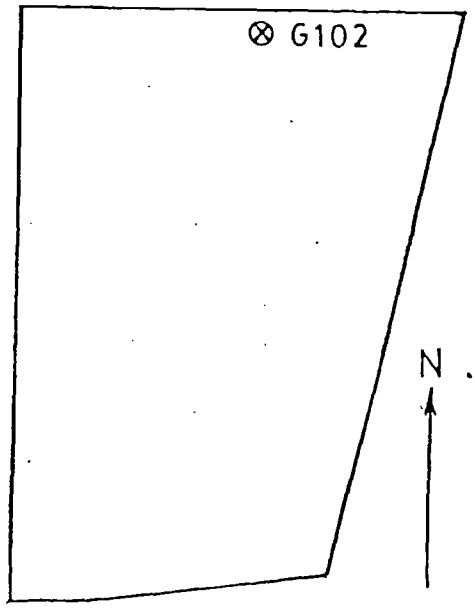
DRILLER: W.H. FLOOD & CO.

WELL CASING: SCH. 40 PVC

WELL DIAMETER: 4"

SCREEN SLOT: 0.02"

LOCATION MAP



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harza engineering associates,
2025 butterfield road

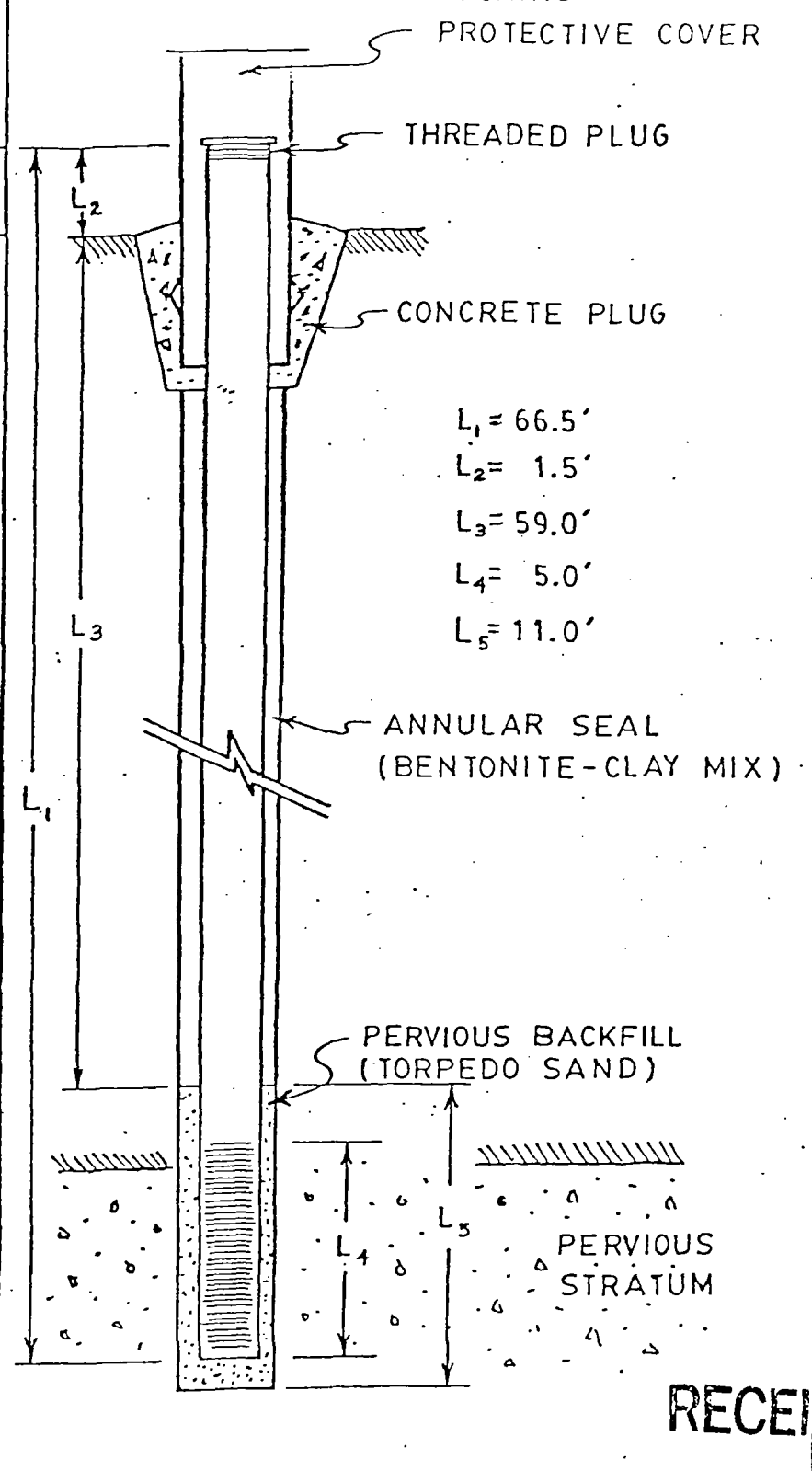
MONITORING WELL DETAIL

SITE: RICHTON PARK LANDFILL

WELL IDENTIFICATION: G101D

ELEV. U.S.G.S. DATUM

WELL DETAIL



REMARKS

DATE OF DRILLING: 10-13-77

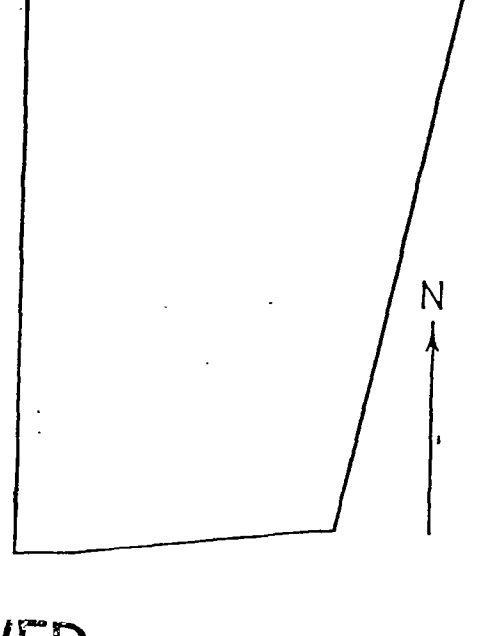
DRILLER: W.H. FLOOD & CO.

WELL CASING: SCH. 40 PVC

WELL DIAMETER: 4"

SCREEN SLOT: 0.02"

LOCATION MAP



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2625 butterfield road

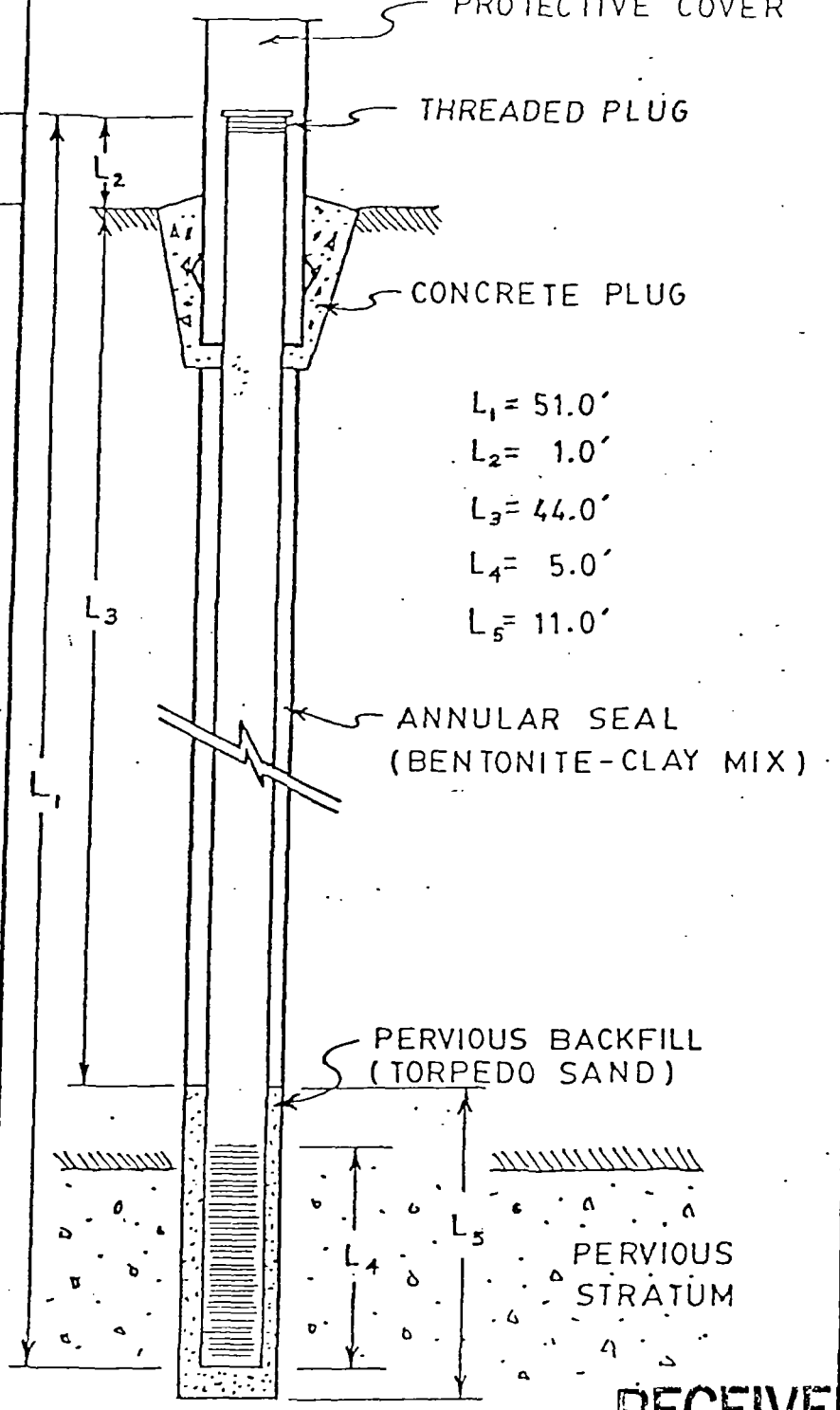
MONITORING WELL DETAIL

SITE: RICHTON PARK LANDFILL

WELL IDENTIFICATION: G101

ELEV. U.S.C.S. DATUM

WELL DETAIL



REMARKS

DATE OF DRILLING: 10-13-77

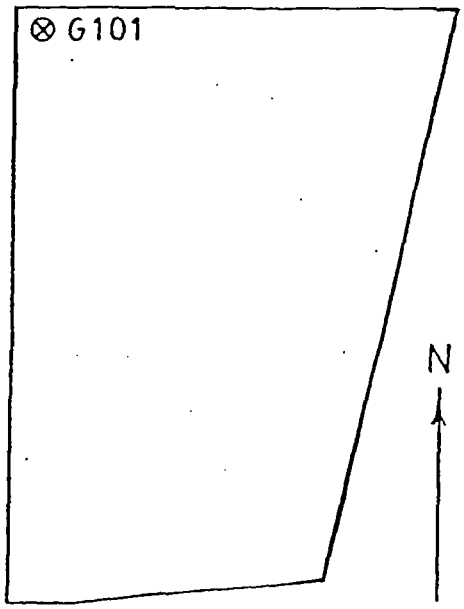
DRILLER: W.H. FLOOD & CO.

WELL CASING: SCH. 40 PVC

WELL DIAMETER: 4"

SCREEN SLOT: 0.02"

LOCATION MAP



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eldredge engineering associates,
2625 butterfield road
oak brook, illinois 60521

There is one deep well located within 20' of each of the four shallow wells. The well tips were installed at depths from 64' - 67' below ground grade. The deep wells were constructed in the same fashion as the presently approved monitoring network. All four deep wells were capable of producing groundwater samples at the time that they were sealed off.

In order to supplement the existing groundwater observation system, we intend to restore the four deep wells for inclusion into the monitoring program. The following are components of the supplemental program designed to improve the total groundwater monitoring network:

1. Well construction details on the 4 deep and 4 shallow wells (enclosed).

2. Well re-development procedures (enclosed).

3. Ground, rim, and tip elevations for all 8 wells tied to a common bench (U.S.G.S. Datum).

4. Locking metal casings and surface annular sealing (cement plug) for the four deep wells.

5. Ongoing monitoring of the four shallow wells for water level and water quality (when possible).

6. Notification of IEPA field staff (Ken Bechely) prior to well rediscovery and re-development activities.

7. Quarterly laboratory analysis of samples from the deep wells for the expanded (annual) list of chemical parameters for a period of one year.

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We plan to attempt to locate the four deep wells when frost has left the ground, probably in early April. Water quality analyses of samples from the four deep wells will be submitted as a part of the normal May monitoring. This schedule should allow sufficient time for well stabilization, assuming well location and re-development efforts have been successful.

I appreciated the opportunity to meet with you, John Student, and Linda Kissinger to discuss the groundwater monitoring program at the I-57 project. Please contact us if you have any questions on the material enclosed.

Very truly yours,

ELDREDGE ENGINEERING ASSOCIATES, INC.

I. Keith Gordon, P.E.
Project Manager

IKG:pr
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Enclosures
cc: A.A. Daniels
J. Benedict

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